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identifying at least one modification and its associated mass;

identifying a subset of modified query mass values from the plurality of query mass values wherein the associated mass of the modification is subtracted from the query mass value to obtain the modified query mass value;

identifying a spectral range for the modified query peptide residing between approximately zero and the query peptide parent ion mass;

subdividing the spectral range into at least one interval;

performing searches on each interval to identify similarities between the mass values for the modified query peptide and the plurality of database peptides; and

associating the identity of the modified query peptide with a selected database peptide based upon the search with the most significant identified similarities.

(New) The method of claim 29 wherein said substitution site comprises an amino 30. acid selected from the group consisting of: glutamine, glutamate, asparagine, and aspartate.

REMARKS

Attached hereto are supplemental Claims 16-30 which Applicant submits prior to initial Examination for consideration by the Examiner by the current amendment.

Respectfully submitted,

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